## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) In a test apparatus, a method of testing a device, said method comprising:

sending a first test pattern to a device under test (DUT), said first test pattern part of a planned sequence of tests, wherein a first test is executed using said first test pattern;

evaluating test results for said first test and received from said DUT, said test results comprising anomalous data indicative of a defect in said DUT;

automatically selecting a second test pattern that is not part of said planned sequence of tests, wherein said second test pattern is selected based on a diagnosis of said anomalous data by said test apparatus, wherein said diagnosis is performed by recognizing a pattern in said anomalous data, wherein said second test pattern is selected according to said pattern in said anomalous data; and

sending said second test pattern to said DUT, wherein a second test is executed using said second test pattern.

2. (Original) The method of Claim 1 wherein only said anomalous data is saved and evaluated by said test apparatus.

3. (Original) The method of Claim 1 wherein said test apparatus comprises a plurality of pins for receiving signals from said DUT, wherein at least one of said signals includes said test results.

4. (Original) The method of Claim 3 wherein said test results received on said one of said pins are conditionally captured and stored in response to a signal received on another of said pins.

5. (Original) The method of Claim 3 wherein said test results are conditionally captured and stored in response to said test apparatus recognizing a begin sequence of one or more bits received from said DUT.

6. (Original) The method of Claim 5 wherein capture and storage of said test results are ended in response to said test apparatus recognizing an end sequence of one or more bits received from said DUT.

7. (Original) The method of Claim 1 wherein said second test pattern is selected from a plurality of precomputed test patterns.

8. (Canceled).

9. (Currently Amended) An automated test system comprising:
a test controller; and
a test instrument coupled to said test controller, wherein said test instrument sends a first test pattern to a device under test (DUT) that executes a first test using said first test pattern, said first test pattern part of a planned sequence of tests, evaluates test results for said first that are received from said DUT, said test results comprising anomalous data indicative of a defect in said DUT, and automatically selects a second test pattern that is not part of said planned sequence of tests, wherein said second test pattern is selected based

on a diagnosis of said anomalous data by said test instrument, <u>wherein said</u> <u>diagnosis is performed by recognizing a pattern in said anomalous data, wherein</u> <u>said second test pattern is selected according to said pattern in said anomalous</u> <u>data,</u> wherein said second test pattern is sent to said DUT, and wherein a second test is executed using said second test pattern.

10. (Original) The automated test system of Claim 9 wherein only said anomalous data is saved and evaluated by said test instrument.

11. (Original) The automated test system of Claim 9 wherein said test instrument comprises a plurality of pins for receiving signals from said DUT, wherein at least one of said signals includes said test results.

12. (Original) The automated test system of Claim 9 wherein said test results received on said one of said pins are conditionally captured and stored in response to a signal received on another of said pins.

13. (Original) The automated test system of Claim 9 wherein said test results are conditionally captured and stored in response to said test instrument recognizing a begin sequence of one or more bits received from said DUT.

14. (Original) The automated test system of Claim 13 wherein capture and storage of said test results are ended in response to said test instrument recognizing an end sequence of one or more bits received from said DUT.

15. (Original) The automated test system of Claim 9 wherein said second test pattern is selected from a plurality of precomputed test patterns.

16. (Canceled).

17. (Currently Amended) An automated test system comprising:

means for sending a first test pattern to a device under test (DUT), said first test pattern part of a planned sequence of tests, wherein a first test is executed using said first test pattern;

means for evaluating test results for said first test that are received from said DUT, said test results comprising anomalous data indicative of a defect in said DUT; and

means for automatically selecting a second test pattern that is not part of said planned sequence of tests, wherein said second test pattern is selected based on a diagnosis of said anomalous data by said test apparatus, wherein said diagnosis is performed by recognizing a pattern in said anomalous data, wherein said second test pattern is selected according to said pattern in said anomalous data, wherein said means for sending then sends said second test pattern to said DUT, and wherein a second test is executed using said second test pattern.

18. (Original) The automated test system of Claim 17 wherein only said anomalous data is saved and evaluated.

19. (Original) The automated test system of Claim 17 wherein said test results are conditionally captured and stored in response to a signal received from said DUT.

20. (Original) The automated test system of Claim 17 wherein said test results are conditionally captured and stored in response to a begin sequence of one or more bits received from said DUT.

21. (Original) The automated test system of Claim 20 wherein capture and storage of said test results are ended in response to an end sequence of one or more bits received from said DUT.

22. (Original) The automated test system of Claim 17 wherein said second test pattern is selected from a plurality of precomputed test patterns.

23. (Canceled).